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The Johns Hopkins Magazine

● AN OPERATION'S LOGISTICS

The Unladylike Behavior of Maria Mitchell

In a quiet house in Lynn, Massachusetts, in 1889, an old woman lay waiting for death. "Well," she said in amused wonder, "if this is dying, there is nothing very unpleasant about it." And the book closed for one of the most remarkable of the many remarkable women America has produced.

Her story began on a night very long ago when, as a Quaker girl in Nantucket, Maria Mitchell discovered a comet—and got a gold medal worth 20 ducats from the Danish King.

Overnight she became a celebrity. But many people, wedded to the popular notion of woman as a "household ornament," regarded Maria as an unwelcome phenomenon and her discovery as only an accident.

That was because they didn't know Maria Mitchell. At 12 she could regulate a ship's chronometer; at 17 she understood Bowditch's "Practical Navigator" and was studying science in self-taught French, German and Latin. In time she would become the first woman member of the American Academy of Arts and Sciences, the first woman astronomy professor—in Matthew Vassar's Female College—and a member forever of New York University's Hall of Fame.

Moreover, all her adult life she was to work with growing success in the crusade to make American women free.

No one these days would question the rewards of Maria Mitchell's crusade. Women today enrich every level of public life. And, in family life, they guard financial security two times out of three. One reason, probably, why their families have more than $40,000,000,000 saved—in guaranteed-safe United States Savings Bonds.

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The Johns Hopkins Magazine

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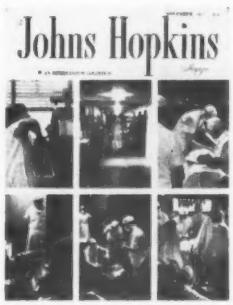
The Cover: All surgery requires great coordination among the members of the operating team and their aides. For the extraordinarily delicate "open heart" operation, in which a mechanical pump (seen in the two pictures at the lower left of the cover) temporarily takes the place of the patient's heart, the planning and coordination are unusually complex. For a glimpse of what must be done, see the story on page 14.

PHOTOGRAPHS BY ALAN J. BEARDEN



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By BERNARD LEWIS

The Middle E

THE MIDDLE EAST today consists of a series of sovereign national states, almost none of which, in their present form, have any roots in the past. Some, like Turkey and Persia, are the metropolitan remnants of bygone empires, in which the former ruling peoples are feeling their way toward a national instead of an imperial identity and existence. Others are new creations, fashioned from the debris of empires, with frontiers drawn not by history and geography but by statesmen on maps. These new political entities were for long irrelevant and unreal to the peoples who lived under them.

The territorial and linguistic nation and the national state are both alien to the Moslem Middle East, where men's basic loyalties were determined not by language or fatherland but by religion. Loyalty to a place was known—but it was to a village or a quarter, not a country; loyalty to one's kin was ancient and potent—but it was to the family or the tribe, not to the ethnic nation. The ultimate loyalty, the measure by which a man distinguished between brother and stranger, was religion, and political allegiance belonged to the dynastic sovereign of the Islamic state.

Today, this has changed. The sense of Turkish, Persian, and Arab national identity is very strong, at least among those classes which have received a modern education or have been affected by modern ideas. Even the more specifically European sentiment of patriotism—love of country in the political sense—has made some headway.

In Turkey the Kemalist government and its successors discouraged pan-Turkish and pan-Islamic tendencies—loyalty and politics by race or faith—and instead tried, with considerable success, to foster in the Turkish people a sense of communion with the country they inhabit. Egypt is a country well-defined by both history and geography, and has now been the center of a separate, modern state for a century and a half—long enough for a sense of separate territorial nationality to emerge. Iran, distinguished from its neighbors by both language and religion, has always had a strong sense of cultural identity and has, moreover, for long been the seat of a sovereign and separate state. Israel, transplanted from overseas, has refashioned a unity of faith and destiny into a more-or-less European form of political loyalty and organization. Even in the Fertile Crescent the new states are beginning to take root in the loyalties and sentiments of their peoples, and at times manifest a strong desire for separate survival. This is especially so where their politics coincide with ancient distinctions and rivalries—as for example between the Eastern and Western slopes of Lebanon, or between the rulers of the Nile and of the Tigris-Euphrates valleys.

These forms and these allegiances are, however, new. Even where they are taking root they are still tender, immature, and precarious. They do not yet correspond to the feelings and loyalties of the great mass of the population; they cannot adequately express the instinctive and spontaneous responses even of the educated elite to the challenges of internal and international affairs. They cannot therefore provide us with a key to the understanding of those movements and policies in the Middle East which are due not to the calculations of groups or individuals but to a real upsurge of popular sentiment and emotion.

TO ACHIEVE some understanding of Middle Eastern attitudes in world affairs at the present time, we must view the Middle East not as countries, not even as nations, but as a civilization. It is unfortunate that we have got into the habit of calling the area the Near East or Middle East. The first of these names is diplomatic in origin; the second strategic. Both are colorless geographical expressions which fail to express or even suggest a civilization, as real and distinctive an entity as Europe, India, or China and very much more so than Africa or Asia.

We may define it historically as the area of the great Islamic Empires of the Caliphs and their successors, and of the classical Islamic civilization which grew up under their aegis. Its early, formative period ended before the Crusades. Its final flowering took place under the Turkish and Persian Empires which, from the sixteenth to the early twentieth centuries, divided what we call the Near and Middle East between them.

Essentially, it was a civilization of three peoples and of three languages—Arabic, Persian, and Turkish. Its territorial core was Northeast Africa and Southwest Asia. In this sense the Middle East does not stop at the

le East in World Affairs

An authority offers some guideposts to Westerners who may be puzzled by the seething situation there and by our role in it

Soviet border, as in the rather artificial diplomatic and military usage, but includes extensive areas in Transcaucasia and Central Asia which, from the Middle Ages until the Russian conquest, were under Arab, Persian, or Turkish rule, and which are still inhabited by Persian or Turkish-speaking Moslems.

Of those parts of the Middle East that are under Soviet rule there is little that can be said now. Our governments have for some reason followed the Soviet lead in excluding them from the consideration of Middle Eastern affairs, and in any case, despite a common background, their recent and present situation differs so much from that of the sovereign states of the Middle East that it is difficult to consider them together. I shall therefore confine my remarks to those parts of the Middle East that lie south of the Soviet border.

NOW THAT THE FOG of battle and the mists of diplomacy are clearing from the Middle Eastern scene, it is becoming apparent that certain fundamental changes have taken place. One of these has been the decline of British power. The turning point came in July, 1954, when, a few weeks after the Eisenhower-Churchill conversations in Washington, Britain and Egypt reached agreement for the evacuation by the British of the Suez Canal zone. Great expectations were placed in that agreement. At the time, the hope was widely entertained and still more widely expressed that, with the removal of the final Egyptian grievance against the West, real friendship and co-operation would at last become possible.

For those who held them, those hopes have been disappointed. The general situation in the Middle East, far from improving, deteriorated rapidly. The Egypt-Israel border, after a period of comparative calm, became and has remained the chief battlefield of Israel-Arab conflict. The removal of the last specifically Egyptian grievance left the Egyptians free to take up the larger causes of those whom they call their Arab and African brothers. And finally, though the term "power-vacuum" be objectionable, the fact remains that the withdrawal of British influence has been preceded, accompanied, and followed by the growth of the influence of other powers.

It may be useful at this point to sum up, briefly and schematically, the chief phases in the development of great power influence in the Middle East. After the victory of 1918, Great Britain and France were in exclusive control of the area, unchallenged except by one another. In the nineteen-thirties and forties Britain and France drew together to meet and, ultimately, defeat the attempt of the Axis powers to oust them from the area. Since then, first France and then—with a change in the casting but not in the script—Great Britain have been eliminated from most of their positions of power and influence, leaving the center of the area to a new set of contestants.

IT WOULD, however, be a misleading simplification to describe the present Middle Eastern situation only in terms of American-Russian rivalry. For one thing, Britain and France, though reduced in stature, can still call on certain reserves of good will and esteem in the Middle East. These, after reaching their lowest point at the time of the Suez incident, have begun to recover, and may be expected to grow still further as the Middle Eastern peoples come to realize that their protnsts against domination and tutelage, power politics, spheres of influence, and the rest must be delivered to new addresses.

Moreover, there are other heirs to Britain's Middle Eastern policy. Britain's direct interest in the Middle

East dates from the late eighteenth century, and was a consequence of the establishment of British paramountcy in India. It was after the end of that paramountcy that British interest in the Middle East began to dwindle—and it was not long before both the successor governments to the British Raj in India began to pick up the pieces of its foreign policy on the Northwest Frontier, the Indian Ocean, the Persian Gulf, and the Red Sea—on the land and sea approaches to India, that is—and to fashion new Middle Eastern policies of their own.

Their task is of course greatly complicated by the fact that there are now not one but two governments in the subcontinent, and that neither of them possesses the military resources for an independent great power policy. Both, however, possess in their dealings with the Middle East certain advantages which Britain and other Western powers could never have, and it would be a grave error to underestimate the role of either Pakistan or India in the Middle East—or to forget that their policies rest on genuine national and geopolitical interests.

Another Asian contestant is China, which in recent years has for the first time begun to evolve a world-wide and not merely a Far Eastern foreign policy, and has already shown many signs of an active and growing interest in the Middle East. It may be noted that Colonel Abdel Nasser's dalliance with Moscow was preceded and perhaps prepared by his meeting with Chou En Lai at Bandung.

BUT WHAT of the Middle East itself—of this group of sovereign states and peoples who are no longer content, in a common phrase, to be the objects of history, but wish to become its subjects?

Middle Eastern statesmen insist vehemently that there is no such thing as a power-vacuum, that the Middle Eastern peoples must be masters of their own fate, and that they are not concerned with the rivalries of great power blocs. There can be no doubting the sincerity of their wishes in this, but, as the great Arabic writer Hariri says, "You are in one valley and I am in another valley and what a difference there is between the wisher and the wish." In fact no Middle Eastern states, nor any conceivable combination of Middle Eastern states, could in present circumstances play an active and wholly independent role in Middle East affairs—as can easily be seen in the maneuvers, in the last few years, of pro-Westerners, anti-Westerners (a more accurate description than pro-Communists), and the adherents of the "a-plague-on-both-your-houses" school.

A crucial question is, What are the relative strengths of the three schools? There are governments and politicians, groups and individuals, of all three tendencies, and some which seem to fluctuate between them. But of one thing there can be no doubt: it is the anti-Western policy which commands the widest, readiest, and strongest support in most of the countries of the Middle East. This was most strikingly demonstrated in September, 1955, when the Czech-Egyptian arms deal was announced. Far more significant than the arms deal itself was the wave of almost ecstatic joy with which the news of it was received all over the Arab world. The Syrian, Lebanese, and Jordanian chambers of deputies at once voted resolutions of congratulations to Colonel Nasser, and almost the entire Arab press greeted the news with exultation and delight.

This reaction was due not to any special love for the Soviet bloc, nor to any desire to see its influence extended in the Arab world, but to a lively appreciation of the quality of Colonel Nasser's act as a slap in the face for the West. The Colonel's slap, and the red-faced, agitated, and ineffectual Western response to it, gave dramatic expression to a mood and a wish that unite many people in the Middle East—the mood of revulsion from the West, and the wish to spite and humiliate it. There are many statesmen and even a few governments in the Arab world who believe that the long-term interests of their countries and peoples require co-operation with the West, help from the West. They can, however, only pursue such policies by disregarding or suppressing popular feeling. It is the policy of rejection and insult that arouses immediate and spontaneous enthusiasm among the mass of the people.

WHAT is the reason for this anti-Western feeling? There is no lack of answers to this question. First, there is the long list of specific political grievances, beginning with the Palestine question and including such other items as Algeria, Suez, and the rest. Then there are the economic and social dislocations resulting from the impact of Westernization in its various forms. These are in the long run far more important than the political grievances as a source of restlessness and resentment. By their nature, however, they are not easy to formulate and discuss on a political level, at any rate in the countries which have no tradition of such discussion; nor can the blame for them readily be thrown on nameable and recognizable culprits. It is therefore the political griev-

ances that are most to the fore, both as an outlet and as a focus for anti-Western feeling. Sometimes indeed it is difficult to tell whether a particular grievance is an irritant or a safety valve.

In discussing the relative importance of these various political grievances, Middle Easterners will naturally give primacy to those in which they themselves are directly concerned. Westerners on the other hand incline to the view that if those grievances directed against *other* Westerners could only be met, their own more reasonable requirements would find easy acceptance—and there is always someone ready to serve an interest or a prejudice by encouraging this belief. Variants of this view have been put before many different audiences in the past, and have been argued, asserted, suggested, or hinted, according to the ductility of the evidence and the skill of the advocate.

A current form of this interpretation, which enjoys a measure of popularity in some quarters today, is that were it not for the existence and persistence of the Israelis, the incompetence and greed of the French, the duplicity and rapacity of the British, there could be an idyllic marriage of American interests and Arab nationalism, in which the latter would be firm and independent against all others but gracefully acquiescent in American requirements. In that happy day there would be bases for the military, treaties for the diplomats, concessions for the businessmen, converts for missionaries, and a general glow of mutual friendship and good will.

A pretty picture—but of an apocalyptic rather than an historical quality. The events of the last few years have shown that the removal of particular grievances produces no real alleviation, since the general upsurge of anti-Western feeling soon finds other outlets and expressions. They have shown too that though anti-Western feeling was directed chiefly against Britain and France, it was to no small extent in their capacity of leaders of the Western world. Today they are no longer the exclusive targets of hostility; soon they may no longer even be the chief targets.

WHY should this be so—why should the United States, which has never annexed or occupied an inch of territory in the Middle East, which on the contrary has shown a generosity without precedent in history towards the states of the Middle East, be included in this generalized hostility to the West?

We shall be better able to understand this situation if we view the present discontents of the Middle East not as a conflict between states or nations but as a clash between civilizations. The "great debate," as Gibbon called it, between Islam and Christendom has been going on since the Arab Moslem conquerors first swept westward into Christian Syria, North Africa, and Spain. It continued with the Christian counter-offensive of the Crusades and its failure, the thrust of the Turks into Europe, and their hard-fought retreat and withdrawal. For the past century and a half Middle Eastern Islam has been subjected to the impact and domination of the West—political, economic, and cultural domination even where, as in most of the Middle East, there was no direct rule. This impact has shattered traditional patterns of thought and behavior, of political and social loyalty and organization, beyond repair and has posed to the peoples of the Middle East an immense problem of readjustment, both in their dealings with the outside world and in their own internal affairs.

The change brought great benefits, and will no doubt bring others in the course of time. But it would be a piece of myopic self-conceit on our part to deny that it has also done great damage and is the chief cause of the political and social formlessness, instability, and irresponsibility that bedevil the public life of the Middle East. In our own day the crisis has come to a head, and the anger which it engenders is directed outwards, against the West—the millennial adversary, and also the place in which these devastating changes had their origin.

In the twilight world of popular myths and images, the West is the source of all evil—and the West is a single whole, the parochial subdivisions of which are hardly more important than are those of the Middle East for the average Westerner. And in this mood of hostility—which we must concede has cause if not justification—those who pander to anti-Western feeling will be able to count on a ready and fervent response, while those who seek to co-operate with the West will have to circumvent popular opposition by guile, stealth, or force. To many Americans it must have seemed incongruous, if not uncongenial, that their government should

Continued on page 24

The author is professor of history of the Near and Middle East in the School of Oriental and African Studies of the University of London, and is the author of "The Origins of Isma'ilism" and "The Arabs in History." The accompanying article is adapted from an address given at the Johns Hopkins School of International Studies' recent week-long symposium, "Tensions in the Middle East," the full proceedings of which will be published in a book of that title by the Johns Hopkins Press during the coming year.

McCOLLUM-PRATT

It is an institute with a co-operative spirit along with a deep concern for preserving its scientists' individuality and freedom

SCIENCE, today, finds itself in a quandary born of its own mid-twentieth-century complexity. More and more, in order to attack areas of ignorance, scientists of many specialties must mesh their talents. Chemists, who once may have been able to practice pure chemistry, must often, nowadays, delve deeply into physics and biology, enlisting the co-operation of specialists in those fields. Biologists are involved in physics and chemistry. Medical investigators frequently find themselves needing a knowledge of, or expert assistance in, such foreign fields as electronics and machine design.

Along with growing complexity, there has been an inevitable by-product: growing cost. As science makes use of advanced technology, instrumentation reaches fantastically expensive heights. As more specialties are brought into play in a given problem, staff needs —and, inevitably, staff costs—soar.

And there has been a proliferation of communications problems, as well. Books and journals devoted to the traditional specialties are not adequate to handle the new specialties, the sub-specialties, the hybrid specialties which science's progress has bred.

One result of all this has been the "team" approach to a scientific problem: the creation of a group of researchers, each an expert in one phase of the over-all problem. A relatively simple such team might consist of a chemist, a biologist, a physicist, and an engineer, working under a project director, coordinating their talents in the interest of solving the general problem. Another has been the establishment of co-operative research facilities, in which several institutions—universities, perhaps—may pool their resources to acquire equipment and build staffs which would be prohibitively expensive for any one of them to undertake on its own. Industrial firms have formed research institutes to stay abreast of scientific and technological advances in their fields.

But—and here is the heart of the quandary—what happens, in the process, to that ingredient of scientific research that has, for decades, been regarded as essential: the individuality, the independence, the freedom to think and act on one's own and, indeed, on occasion to fail? What of the lone investigator, the creative man with an idea?

Too often, in "team" research, scientists have suspected that such a man has been stifled and that the results which he might have produced have never been realized. One factor in many human advances, for example, has been an individual's rebellion against the thinking of a group—but rebellion is not always possible in an enterprise in which the guiding philosophy is teamwork.

Is it possible, somehow, to merge the two needs? Is it possible to take the advantages of co-operative research and combine them with a deep concern for individual independence? If so, science should be the better for it. It might be able to eat cake and have it too: to avail itself of the undeniable advantages of co-operative enterprise while carefully preserving the creative benefits of individual freedom.

The combination is being tried. Sometimes it works; sometimes it does not. The obstacles to its working are rather formidable. Sometimes they are hidden and dis-

In a darkened laboratory at Johns Hopkins, William D. McElroy (far left) and Robert Airth consider the progress of studies of luminescence in nature. Instrument at right, a photofluoremeter, measures light intensity.

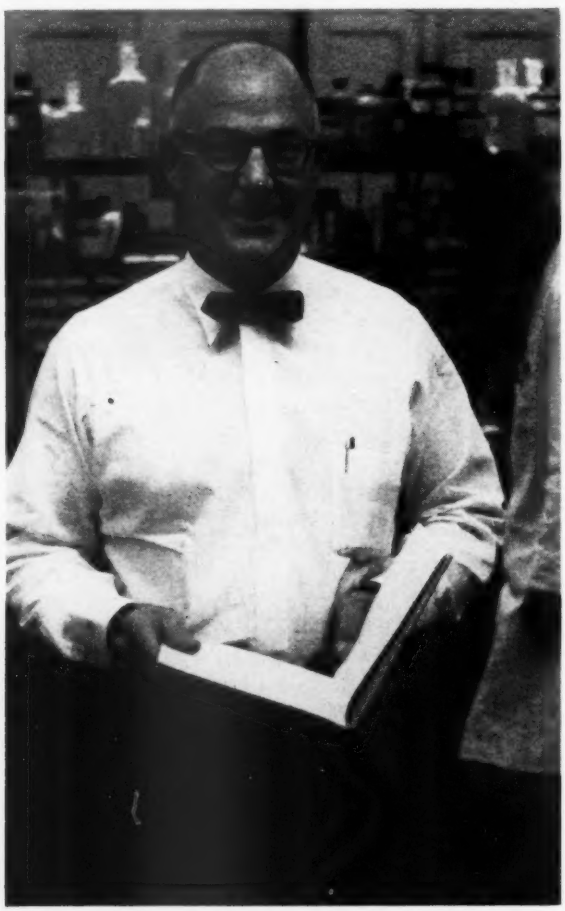
covered only when it is too late; at other times, partly by luck and partly by design, they can be avoided or overcome.

CONSIDER the case of one such attempt at Johns Hopkins.

It had its beginnings on a Virginia farm, where there was a seriously ailing herd of cattle. A man from the King Ranch in Texas finally spotted the trouble. Merely add one ounce of cobalt and a pound of copper to a hundred pounds of salt—the salt lick fed to dairy cattle—and see what happens, he said.

The change in the cows was so dramatic as to appear almost miraculous. The owner of the herd, John Lee Pratt, a trustee of Johns Hopkins, was deeply impressed. He could not help wondering, as he witnessed his cattle's recovery, whether traces of metals in diet might not have a part in the health of humans, as well. He decided to investigate.

The field, he found, was a relatively new one. Research was going on in a number of places—fertilizer companies and state experimental stations, among others. But the findings were often unpublished or buried in a multitude of publications, some quite obscure. No one had ever brought together all the available information and attempted to organize it systematically into a useful body of facts.



William D. McElroy, director of McCollum-Pratt

ONE of the few persons with a broad knowledge of the scattered research was Elmer V. McCollum, professor emeritus of biochemistry at the Johns Hopkins School of Hygiene and Public Health. A prodigious reader, culling information from little-known agricultural publications and other writings here and abroad, he had noted a similarity between findings reported by investigators in widely scattered countries. Back in the 1920's, he himself had produced trace-element deficiencies in experimental rats through carefully controlled diets—a highly difficult feat. At about the time that Mr. Pratt's interest in the subject was awakened—1946—research in nutrition had progressed to the point where astonishingly small amounts of such minerals as zinc, copper, iron, and manganese were known to play an important role in the health of plants and animals. (Hence the term "trace elements" or "micro-nutrients.")

Mr. Pratt, having decided he would like to support research in the field, conferred with Dr. McCollum, with the late Isaiah Bowman, then president of the University, and with a number of other Johns Hopkins scientists whose specialties cut across the trace-elements field. Their discussions led to an invitation to a group of scientific authorities in this country and abroad to attend a conference in April, 1947, to explore the possibility of establishing a trace-element research institute at Johns Hopkins.

UP TO THEN, the work done by trace-elements investigators had been mainly descriptive. One of the leading questions, What happens in trace-element deficiencies or toxicities, had been answered. Not so for the *how* and *why*.

At the Hopkins conference, the prevailing sentiment favored an institute devoted to fundamental, rather than applied, research. Dr. McCollum, whose own work had opened new vistas in the field, strongly supported work at the biochemical level.

"The earlier findings," he recalled not long ago, "were essentially important in defining and describing the importance of trace-element deficiencies. But they merely indicated the need for exploring the problem on the macro-molecular level through the use of enzymatic reactions."

Enzymes are proteins that serve to catalyze, or accelerate, specific reactions in living systems. They are widespread in nature and are essential to virtually all

PHOTOGRAPHS BY ALAN J. BEARDEN

A lunch-hour meeting of the McCollum-Pratt Journal Club

chemical reactions in living cells. Since many enzyme systems have metal components or metals associated with them, the isolation and study of these biological catalysts opened a rich mine for studying trace metals.

At the end of the conference, it was recommended that "the University . . . establish a research institute . . . concerned with the fundamental biochemical and physiological problems related to micro-nutrients."

The first major hurdle was cleared: the scientific role of the new institute was now defined and clarified. The next big step was to find the right man to direct the show.

This was not a simple task. It never is. Finding a top administrator is a difficult assignment in any field, but in science it is even more so. The psychological make-up of the scientist and that of the executive are often antithetical.

"We finally decided," Dr. McCollum says, "that the best person for the job was right here in our own back yard."

The man was William D. McElroy, an assistant professor of biology who was only thirty years old.

In a recent conversation, Dr. McCollum tried to recall what there was about Dr. McElroy that initially impressed him: "I tried to draw him out by asking him a lot of questions. He was very well-informed scientifically, and there was a broad scope to his thinking about problems. He seemed to be strongly motivated to get things done, and he applied himself to mastering his subject. There was also the feel of a leader about him."

A tall, broad-shouldered man with a ready smile and a deep voice with Texas overtones, Dr. McElroy today radiates ease and confidence. But back in 1948, the going was rough. He remembers facing a conflict within himself when he was first sounded out about directing the new institute.

One of his first reservations—that the institute might be oriented toward applied agricultural research rather than fundamental biochemical work—had already been resolved by the policy adopted for the institute in 1947. Dr. McElroy has, from the outset, felt that the institute's greatest contribution could be made through fundamental research, and has always held to this course.

Even more troubling, however, was his reluctance to spend time away from his own research. His work on bioluminescence was going well. He had just made an important discovery concerning the mechanism of light energy in fireflies, on which he was eager to concentrate.

Dr. McElroy finally decided not to choose *between* research and administration, but, somehow, to try to

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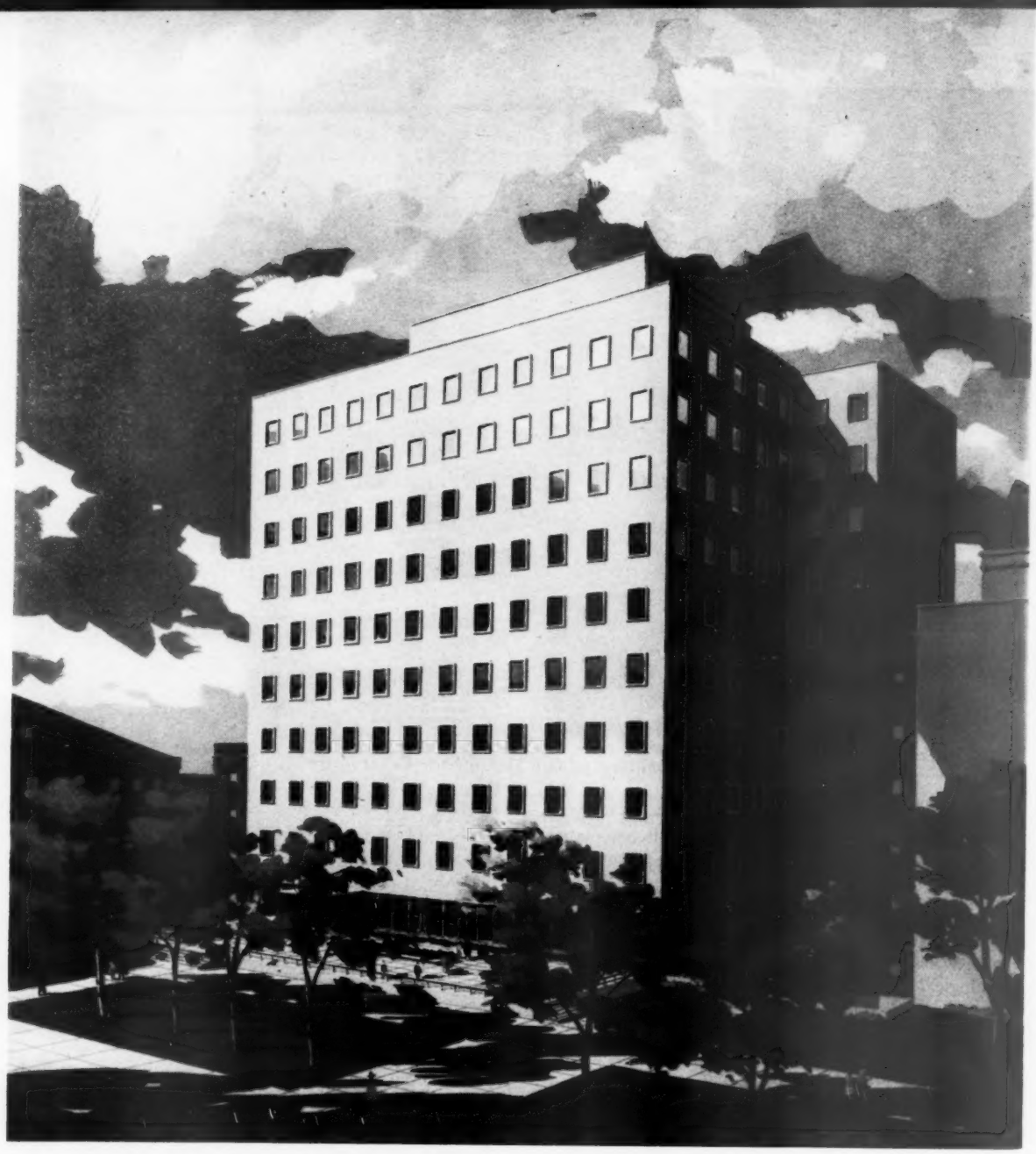
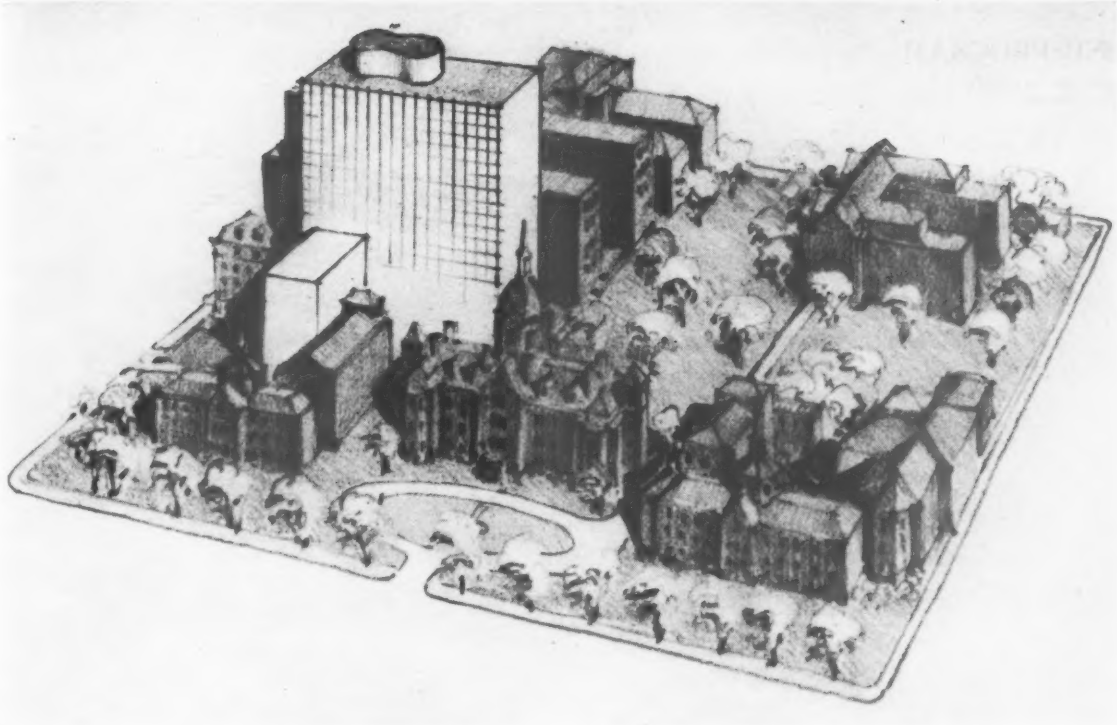


Fisher, Nes, Campbell and Associates, Architects

The Medical School's eleven-story basic science building is designed to provide integrated facilities for instruction and research in the fields of pharmacology, physiology, physio-chemistry, and microbiology. Two lecture rooms seating 120 students each, plus thirteen departmental teaching laboratories, will equip the building as a nucleus for the instruction of two hundred undergraduate medical and basic-science students each term. There are separate research facilities in each department for faculty members and graduate students. The five-million-dollar structure, financed almost entirely by governmental and private gifts, will be of fireproof, reinforced-concrete and steel construction. The first two floors, which will house lounge areas and administrative facilities for the Medical School, will be finished in granite and glass; above, the building will be of light gray brick. The building will be serviced by high-speed elevators and a completely mechanical climate-control system. The windows of heat-absorbing glass will be opened only for washing. The old Physiology Building will be razed, to allow for the development of a plaza area.



James R. Edmunds, Jr., Architect

The Children's Medical Center, still in the early stages of planning, will include about two hundred fifty beds, outpatient clinics, laboratories, and classrooms. Half of its estimated ten-million-dollar cost has been raised.

BUILDING PROGRAM

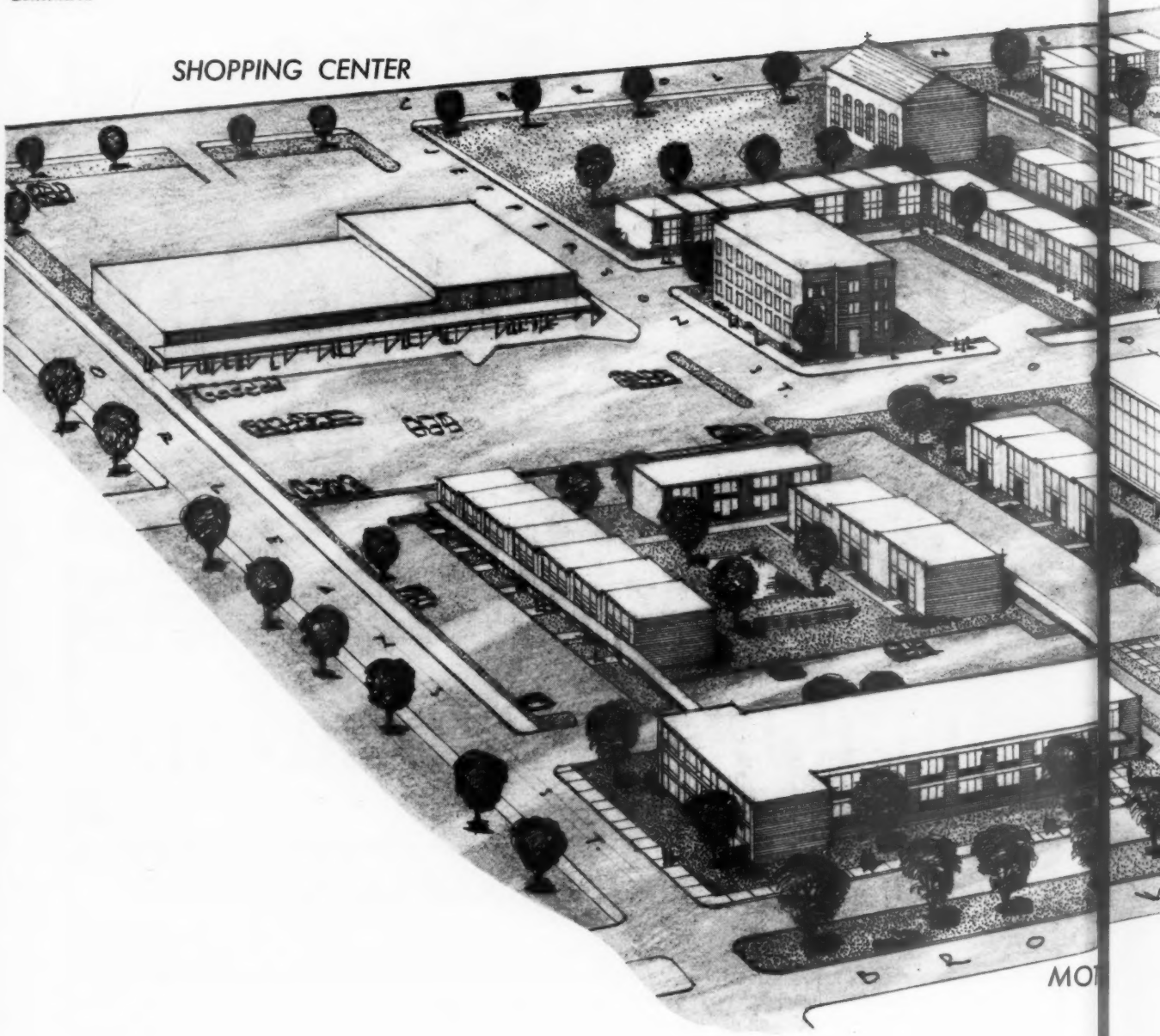
There is going to be a new look at the Medical Institutions as Johns Hopkins sets three construction projects in motion

In recent years an increasingly acute shortage of working and living space has developed at the Johns Hopkins Medical Institutions. To alleviate it three major building projects are now under way or planned.

Construction is expected to begin this winter on an eleven-story basic science building on the Medical School campus. Costing about five million dollars when fully equipped, it will serve as the vital core of the newly-conceived revised program of medical education.

Preliminary plans are being made for a Children's Hospital Center of fifteen or more stories on the site now occupied by the William S. Thayer building for semi-private patients. The Children's Center will pool the physical and financial resources of four medical agencies: the Johns Hopkins Hospital; the Hospital for Consumptives of Maryland (Eudowood Sanitorium), which is concerned with tuberculosis and other chronic diseases of children; the Robert Garrett Fund for Surgical Treatment of Children; and the Harriet Lane Home, which is concerned with child medical patients. The center will bring together, in one central location, services and facilities which are now scattered.

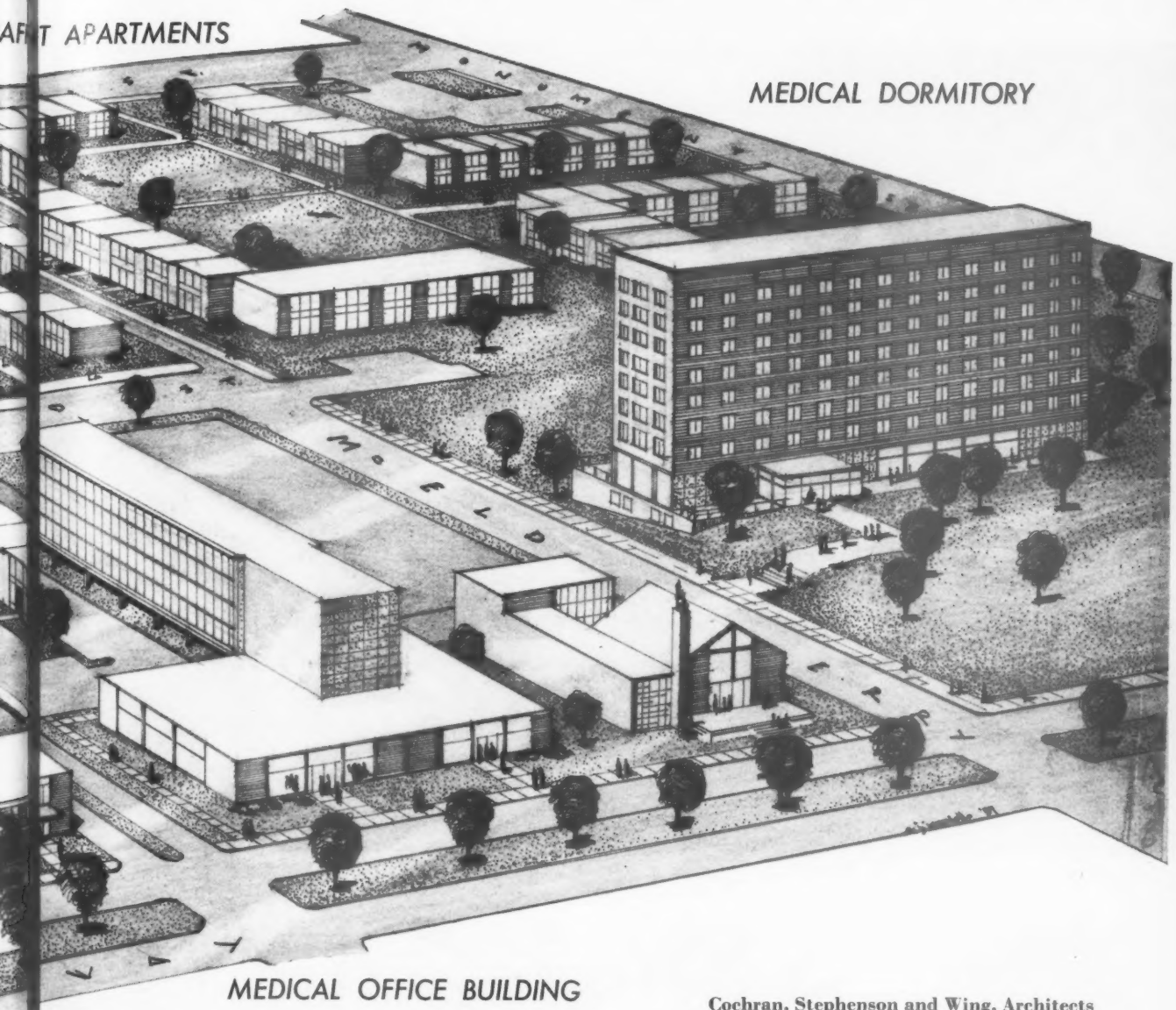
Six square blocks of the twelve-block Broadway Redevelopment Area, facing the Hospital on the west side of Broadway, are being used to construct an extensive center to meet the auxiliary needs of Hospital and Medical School personnel and visitors. The redevelopment area will include a motel, shopping center, and medical office building, as well as a dormitory, and housing for married staff and students.



BROADWAY DEVELOPMENT AREA

For several years the area to the west of the Johns Hopkins Hospital, across Broadway, has been a barren, rubble-strewn area from which slum houses had been razed but on which nothing was being built. Now, six square blocks are being developed into a center for Hopkins students, staff, and visitors.

Adjacent to Hampton House (the nurses' residence), a ten-story air conditioned dormitory has been built for students of the School of Medicine and the School of Hygiene and Public Health. The building has ac-



Cochran, Stephenson and Wing, Architects

commodations for 220 men and thirty women, a cafeteria equipped to serve 250 people at once, and a sun deck. To the west of the dormitory an extensive unit of garden-type apartments has been built for members of the Hospital house staff and married students. Three-bedroom duplex and one-floor efficiency apartments are available at reasonable rents. A shopping center, with a supermarket, a large drug store, and smaller shops, is now under construction and is expected to be open by early 1958. Plans are in an advanced stage for the building of a 146-unit motel which will be on the corner of Orleans Street (U.S. 40 as it enters Baltimore from the east) and Broadway. The motel will provide a swimming pool in addition to rooms for hospital visitors, families of patients, and those who come for out-patient treatment. A medical office building is also planned in the development area. Such a structure would be used by part-time members of the Medical School faculty and Hospital staff for their private practices, making it unnecessary to travel across town to their offices.

Logistics of an Operation

Photographs by ALAN J. BEARDEN

The day before the operation, the artificial heart is assembled. Above are screens over which the patient's blood will flow for the addition of oxygen and release of carbon dioxide.

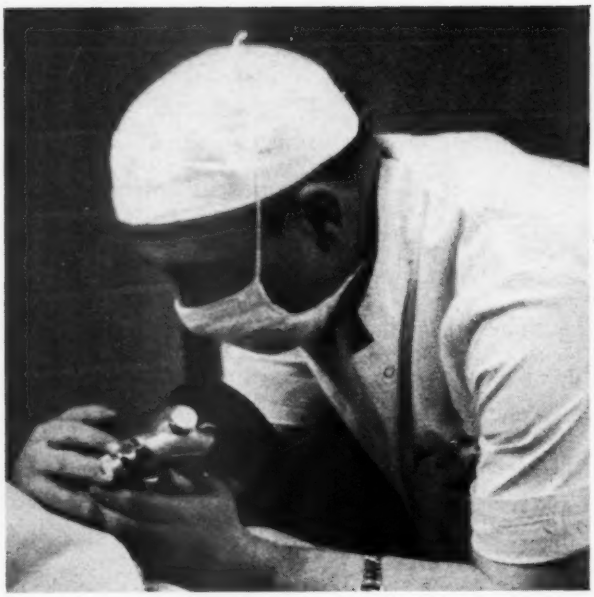
Assembled, the apparatus is sterilized for twelve hours.

THE OPERATION being performed by the surgeons on the opposite page is one of the most delicate that has ever been devised. It was developed in order to repair a most serious congenital defect in the human heart: a hole in the septum, the muscular wall that separates one chamber of the heart from the other. To reach the site of the defect and stitch the hole, surgeons must work within the heart itself—a procedure that is not feasible as long as the heart is pumping blood. The solution: a mechanical heart that can take over the human heart's pumping functions long enough for surgeons to stop the heart's beating and remedy the defect.

The operation, now being performed regularly at Johns Hopkins and a few other hospitals, requires remarkable coordination and teamwork, not only among the operating team itself, consisting of four surgeons and a nurse, but also among ten other persons in the operating room proper and numerous others outside, including engineers, technicians, and eight to ten blood donors. On these pages are a few of the steps required before the blood of a patient can be detoured from his heart and pumped through the artificial heart—the complex and delicate logistics that precede the complex and delicate heart-patching operation itself.

On the morning of the operation, the heart pump, already checked thoroughly, undergoes a final, last-minute inspection.

At the same hour, eight to ten donors are providing blood for the operation. ➤



While the heart pump is on its way to the operating room, the patient is being prepared for surgery. Here the anesthesiologist administers anesthetic.

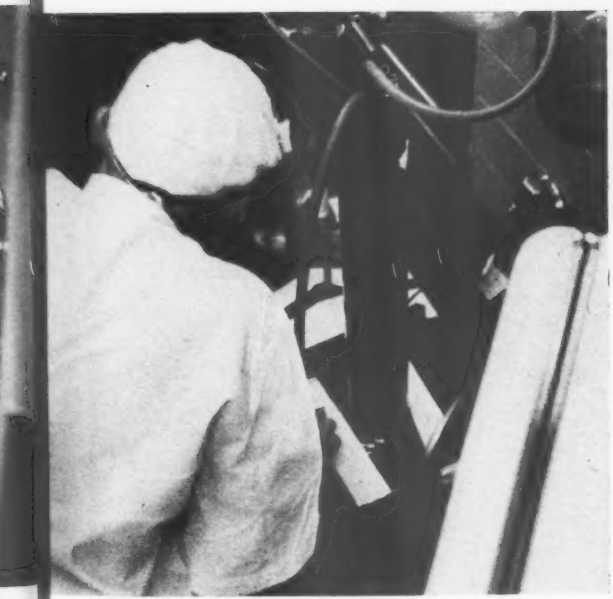
A quarter of an hour later, a cannula, or tube, is inserted in a vein for infusion of blood and intravenous fluids.

The speed of flow is adjusted in the recirculating pump of the heart machine. The patient's body weight determines the blood-circulation rate.

The patient's chest has been opened. Throughout the operation, this operating-room technician prepares needed instruments with the sterilizer in wall.

n the operating room, a strain gauge,
hich records the patient's
lood pressure via needles inserted
n a vein and artery, is calibrated.

Simultaneously, other operating-room preparations move ahead: drainage bottles are adjusted, saline solution is readied, the surgeons assemble.

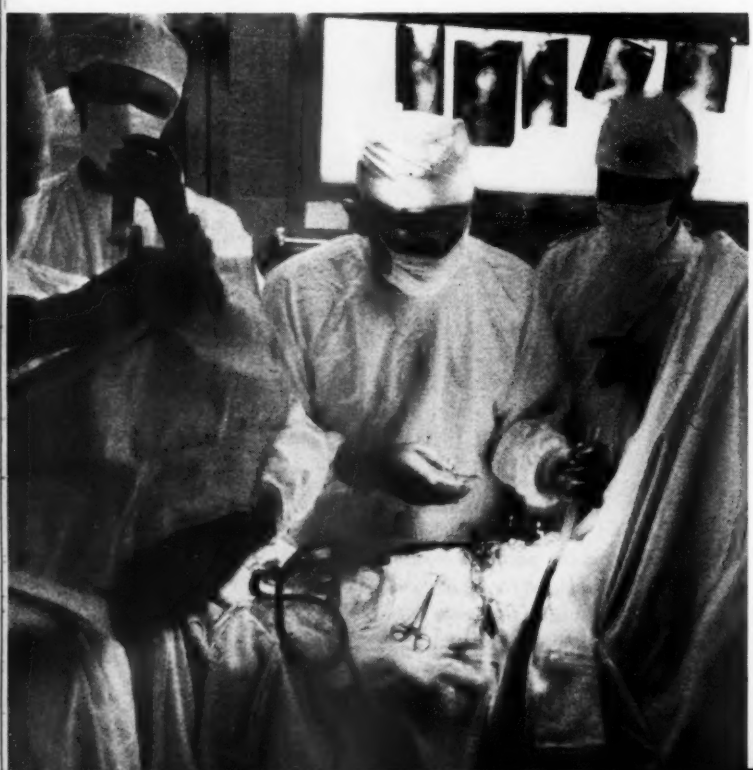


o estimate how much blood the patient
losing and how much must therefore
replaced, an interne checks amount of
lood removed by suction from operating field.

Maintaining the patient's breathing, the anesthesiologist forces oxygen and anesthetic into the lungs, via a tube to the windpipe.

The patient has been in the operating room for about an hour. His heart has been exposed by incision. Now he is ready to be connected to the mechanical pump that will temporarily replace his heart. The tube in the picture will feed to an artery; another will tie in to a vein.

Working under a sheet, a surgeon draws a sample of the patient's arterial blood to measure its pH, or acidity, a guide to the patient's condition which may lead to an adjustment in the amount of ventilation being given to him by the anesthesiologist as the operation proceeds.



Now the actual tie-in with the heart machine is about to occur. Primed with blood, the tube in the surgeon's hand will be connected to the patient. Simultaneously, upper left, another surgeon prepares a syringe containing a mixture of blood and potassium citrate, which will be injected into the patient's heart to stop its beating.

The connection is made; the artificial heart takes over. One pump draws blood from the patient's veins; oxygenated, the blood is returned to his arteries by another pump. Its beating having ceased, the patient's heart can now be opened, and the hole in its inner wall can be repaired.

A Johns Hopkins Gazette

AN UNOFFICIAL COMPENDIUM OF FACULTY AND ALUMNI APPOINTMENTS, HONORS, AND ACCOMPLISHMENTS

COLD VACCINE

WINSTON H. PRICE, associate professor of epidemiology, has announced the development of a vaccine which is effective in stopping some forms of the common cold. Dr. Price's studies led to the isolation of a virus known as the "JH Virus" which caused about thirty per cent of the colds among people studied in 1954 and 1955. He then developed a vaccine that prevented the occurrence of colds caused by JH virus in eighty per cent of the more than four hundred persons vaccinated.

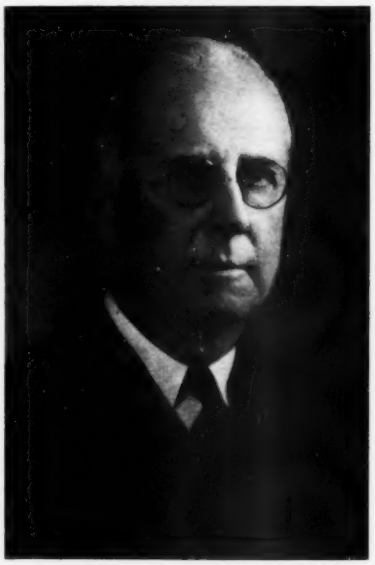
Dr. Price describes his work as "just a beginning" of the task of isolating all the cold-causing viruses and developing vaccines against them. For, while the JH Virus caused thirty per cent of the colds among people studied in a two year period, it might cause only one per cent of the colds in another year.

When a natural JH Virus epidemic occurred in a boys' training school, Dr. Price inoculated one hundred boys. Fifty received the vaccine, twenty-five were given a preparation from killed monkey-kidney tissue (the medium used to grow the virus), and twenty-five were given saline solution (which has no effect at all). Eleven boys who received saline solution caught colds; twelve who received monkey-kidney tissue also caught colds. But of the fifty who received vaccine only three developed cold symptoms. Eight times as many developed colds among those who had not received the vaccine as among those who did.

When a human being is infected with a virus, the blood produces antibodies that eventually destroy the virus, permitting the organism to return to health. For a time the presence of the antibodies prevents a recurrence of the disease. Killed vaccines, such as the one developed by Dr. Price, are harmless in that they do not cause the disease, but they still cause the blood to produce antibodies which result in an immunity.

The vaccine is prepared by a technique similar to that used for the Salk polio vaccine and many other older vaccines.

TWO TRUSTEES DIE



BACHRACH

J. Hall Pleasants

W. Frank Roberts

J. HALL PLEASANTS, B.A. '95, M.D. '99, instructor in clinical medicine '00–'27, associate in clinical medicine '27–'32, associate in medicine '32–'35; on August 24, 1957. He was a trustee of the Johns Hopkins University from 1920 until 1951, when he became a trustee emeritus. He was made an honorary trustee in 1956. Not only was he an author and leader in medicine, history, and the arts; he was also active in charity and civic affairs. He was a trustee of the Peabody Institute in Baltimore from 1922 until the time of his death and served as president of its board for twelve years. He was a trustee of the Baltimore Museum of Art, the Municipal Museum of Baltimore, St. Timothy's School, and was vice president of the Maryland Historical Society for the past twenty-two years. For fifteen years he served as editor of the *Maryland Archives*.

W. FRANK ROBERTS, chairman of the executive committee of the Johns Hopkins Hospital Board of Trustees; on July 11, 1957. He became a trustee of the Johns Hopkins Hospital in 1928, and served as president of the Hospital board from 1948 until 1955, when he became chairman of its executive committee. He served as a trustee of the Johns Hopkins University from 1949 until 1956, when he became an honorary trustee. Mr. Roberts became a vice president of the Bethlehem Steel Company in 1916 and came to Baltimore two years later as general manager of the company's Sparrows Point Plant, a position he held until his resignation ten years later. He then became president and chairman of the board of the Standard Gas Equipment Company. During the depression he served as chairman of the Citizens Emergency Relief Committee and the Public Works Committee for Maryland. He was president of the Baltimore Association of Commerce from 1930 to 1932, a trustee of the Commission on Governmental Efficiency and Economy from 1929 to 1935, and, at the time of his death, a member of the board of managers of the Maryland Institute. In 1955 he was one of the first three recipients of the Johns Hopkins Distinguished Service Awards.

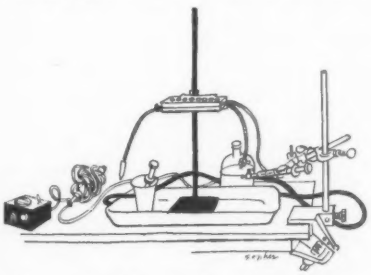
McCollum-Pratt

Continued from page 9

do both. The result has been a happy one for all concerned. Dr. McElroy's own research has moved ahead, and members of the institute believe that his interest in it is one of his chief assets as an administrator. "He's eager to carry on his own work," said one colleague not long ago, "so there's no chance for him to over-direct. You have no idea how much this is appreciated by scientists, particularly those who may have been burned previously by over-zealous administrators, and how much it benefits their work."

THE GROWTH of the McCollum-Pratt Institute—named in honor of Dr. McCollum and its benefactor, Mr. Pratt—has been rapid. Mr. Pratt endowed it, at the outset, with a gift of a half-million dollars. In 1952, he added another million to his original gift, and research activities were expanded to include broad aspects of biochemistry and nutrition, with the trace-element program as one of the major projects.

The institute's physical facilities alone have multiplied many times. In 1949, they consisted of three laboratories and one office in the Johns Hopkins Greenhouse, jammed with people and equipment. Today, there are twelve large labs and offices in Mergenthaler Hall, the headquarters for biological sciences at the Hopkins Homewood campus, in addition to five laboratories in the Greenhouse.



A senior member somewhat wistfully recalls the old days when he could have the entire crowd from the institute for beer and pretzels in a small apartment. With a handful of staff members, one technician whose services were shared by all, no post-doctoral fellows, and no graduate students, it was a comfortable group to entertain. Now the only man who attempts a social evening for the entire institute is Dr. McElroy. His large frame house, vintage 1900, has, when put to the test, held over a hundred people. For today, working with the nine staff members, are twelve post-doctorals and eighteen graduate students, assisted by twenty others in technical and secretarial jobs.

At last count, there were more than 170 papers and seven books credited to McCollum-Pratt. It is not unusual for the *Journal of Biological Chemistry*, known for its high standards, to carry as many as three or four institute contributions in a single issue. The high-water mark was reached in the January, 1954, issue: seven papers.

In its brief span, the institute has nurtured a number of extraordinary biochemists. Some report that during their years at McCollum-Pratt they have done some of their best work, reaching peaks of productivity. Others, who came for graduate work or advanced training, are currently reflecting in their work the benefits of their institute experiences.

Such high-calibered productivity has brought rewards: scientific recognition for the staff, generous support from a number of sources, both public and private, and a flow of post-doctoral fellows whose lands of origin sound like a United Nations roll call.

WHAT ACCOUNTS for the institute's success, conspicuous even in a day when research organizations and scientific "teamwork" are commonplace?

Dr. McElroy's own answer to the question gives a clue. "I'd say freedom of research is most important, once you have a good staff," he says. "And of course, the understanding of the University's top administration is also essential."

The staff members, when queried, agree with him, but they add one more component: McElroy himself. Certainly, as director, he is responsible for one of the institute's outstanding features: the building of its scientific reputation on the research efforts of a number of individuals, each encouraged to fulfill himself as a scientist.

In choosing his staff, Dr. McElroy has looked for fresh ideas and imagination, the ability to think not only creatively but also projectively in terms of concrete problems and experiments. With the right kind of staff, he finds, there are also the intellectual stimulation and co-

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operative spirit that are essential to the enterprise.

But this is not a research "team," in the usual sense: men, equipped with a variety of complementary skills, linked like the pieces of a jigsaw puzzle to form one, unified whole in which the individual piece is but a contributing part. Nor is it a one-man show: a director and a group of associates working on the problems in which the head man is interested. Instead, here is a group of truly independent scientists, each encouraged to do his best, in his own way and at his own pace. The needs of each man are met—funds, equipment, space, personnel, and time—so that the man is free to concentrate on his research.

And another point, expressed by a staff member with experience in a number of other labs: "This place is as free of internal jealousies and tensions as any I have ever seen. And you have no idea how difficult it is to avoid this sort of thing in a growing organization."

THE EVOLUTION of the institute in this direction began when Dr. McElroy was first struggling to assemble a staff. The market for biochemists was extremely tight. Like many another scientific administrator at the time, Dr. McElroy soon came face to face with the fact that one of the aftermaths of World War II was a desperate shortage of trained men.

The competition for scientific personnel proved, oddly enough, to be a blessing: at an early stage in his development as an executive, Dr. McElroy had to face some fundamental questions which sooner or later confront every administrator. To attract good scientists who were also being courted by other institutions, he had to formulate, and then state, a basic policy for the organization.

Would each staff member be free to run his own project? Would each man be at liberty to work on problems of his own choosing? Would research really be free? These are key questions in any scientific organization. Scientists, far from being the timid souls sometimes depicted in caricatures, are fiercely assertive when it comes to matters of scientific principle; and scientists who are in short supply, and thus in an excellent position to be choosy, can be unusually so.

Dr. McElroy's answer was a definite Yes: there would be complete freedom of research for every staff member. By early 1950 he had secured the nucleus of his staff: five young scientists, not one of whom was over thirty-five.

Soon he was confronted with another policy decision, this time involving not men, but money. In casting about for additional funds to support the institute's work, Dr. McElroy received a sizable grant offer from a company interested in supporting applied research on the trace metal, molybdenum. If the gift were accepted, it would be restricted to this work. Dr. McElroy turned it down. He didn't believe that the field of micro-nutrients could be cracked by such a narrow approach.

Ironically, several years later, an important discovery concerning the specific enzymatic role of molybdenum was made at the intitute. The finding was not the result, however, of a direct attack on the molybdenum problem, as the would-be donor had proposed. It was, rather, a corollary discovery stemming from the logical pursuit of a more fundamental problem: the assimilation by plants of nitrates from the soil. The discovery that molybdenum was an essential component of this important enzymatic system might never have been made if the research had been focused solely on the trace-element aspect.

Incidentally, another company—a producer of molybdenum—now gives an annual research grant to the institute, but with no strings attached.

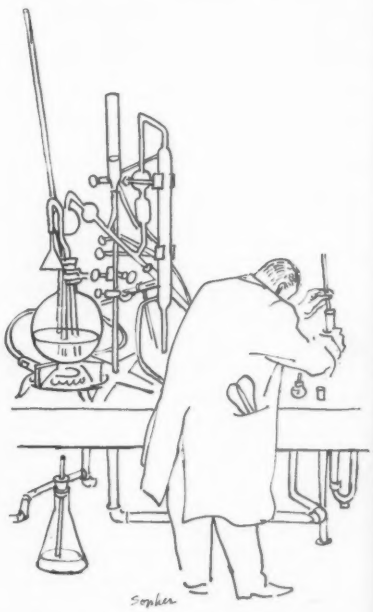
A POLICY providing for freedom of research has a number of facets, each of which must be supported actively. Primarily, a man must be free to investigate those problems which he finds most challenging—the assumption being that as a responsible scientist he will choose to investigate valid, fundamental problems. (There is always the possibility, of course, that a man may go off on a nonproductive tangent and spend years trying to unravel a problem perhaps not ripe for research. But this is the gamble one must take.)

If a man hasn't got his teeth into his problem after several years, or if he has moved into an area too far afield from the institute's general area of interest, then the director has to decide whether or not his continued association with the institute makes sense. Other than reserving this ultimate veto power, however, Dr. McElroy does not interfere in the conduct of research.

There is, for example, no administrative frown when a man plays a scientific long-shot: the 100-to-1 chance that may pay off and sometimes does, beyond anyone's wildest dreams. Nor does anyone tell a scientist that he's searched long enough for a solution to a particularly unyielding problem and must drop the project. "Here, you're the only judge," one of the younger men explained recently. "I feel this is very important, if you object to hopping from one problem to another. I like to stay with a problem until I lick it."

RESEARCH takes time. Many a young instructor with a talent for research has been lost in the shuffle of preparing lectures and marking examination books. Dr. McElroy has tried to avoid this by having junior staff members carry a minimum teaching load, sometimes none. Instead, their first responsibility is to get their own research projects under way. The teaching program is carried by the senior staff.

There is no set pattern for conducting research. Usually, each staff man works just with members of his own group:



post-doctoral fellows, graduate students, occasionally undergraduates, and technicians. On problems calling for a pooling of knowledge, two or more staff members may collaborate. But in contrast to organized teamwork, collaboration at McCollum-Pratt is a temporary, informal, and voluntary arrangement by the participants for the duration of the

particular problem. Most staff members believe that organized teamwork works well enough in applied research but, as one man put it, that "the big, fundamental discoveries are still a function of solitary thought processes at four o'clock in the morning."

The institute's director is in no way involved in these arrangements. They happen voluntarily, sometimes even accidentally: "a crossing of knowledge," as one scientist says, "and a co-operative free association of different skills."

One example of this process took place several years ago. Two staff members, animal biochemists, decided to collaborate with a third, a plant physiologist, in studying the enzymatic effects of a zinc deficiency in plants. To the surprise of all three, they found that not only was there a decrease in the particular enzyme with which zinc was associated (which they had expected), but that there was also an unanticipated and remarkable increase in the activity of certain other enzymes. A single trace-metal deficiency was sufficient to alter the enzymatic balance of the entire organism.

This was a highly significant finding, by itself. But further investigation by one of the participants has led to another: the synthesis of a new compound now being tested experimentally in the treatment of cancer.

Such cross-fertilization of ideas also takes place on an informal level. There is considerable consultation between institute members. Graduate students feel free, for example, to discuss their research problems not only with their major professor, but with any other staff member of the institute.

Such a situation contrasts markedly with that which prevails in many other research organizations, where there is a good deal of fragmentation, mainly because of the large size of the groups. Often, each scientist has his own group—and although ideas within the group are freely reported and discussed, there is little or no liaison between groups. Two scientists working in the same department may have no knowledge of each other's work until a published report appears in a scientific journal.

One McCollum-Pratt staff member has an interesting theory to explain the co-operative spirit at the institute, even in the realm of knowledge and techniques. It all started in the early days of the institute, he says. Equipment and glassware were scarce, and there was a good deal of borrowing. The frequent popping in and out of one another's lab to borrow something or to use a special machine was accompanied by shop talk; and through such day-to-day contacts, interest in one another's work was in-

evitable. The practice has persisted, and, with it, the co-operative exchanges of information.

Recently, the Rockefeller Foundation recognized the uniquely co-operative spirit by granting $120,000 to the institute to support the research program of its entire staff, not a specific project. Another organization, the U.S. Public Health Service, has given an equipment grant of $100,000.

Over the years, the institute has developed a flavor that is apparent even to the casual visitor—a personality, as it were, which has a sort of independent existence, supported by the group. This collective personality is compounded of several ingredients: informality, enthusiasm, and a common bond of scientific curiosity. The resulting mixture makes for an unusually stimulating scientific environment.

The institute's location may be one advantage in all this. The Boston-to-Washington area contains the heaviest concentration of active biochemical units in the country. Guest speakers and visiting scientists are frequent.

Probably the best example of the institute's spirit is the McCollum-Pratt Journal Club. This informal lunch-hour group meets three times a week to hear a paper presented and analyzed by an institute staff member or graduate student, and spirited discussions often take place. There is no doubt that the open discussions—and, frequently, disagreements—encourage students to think for themselves and to speak their minds.

The Journal Club's challenging environment, with its high standards for thinking and expression, provides a preview, frequently, of how the general scientific community will receive a particular piece of research. Experienced investigators have been known to go back to their laboratories, following one of the lunch-hour sessions, and devise new experiments designed to meet the criticism raised by a student, perhaps. (In connection with this, more than one staff member has reported that a principal source of stimulation is the institute's graduate program, initiated in 1950. Aside from the extra research that can be accomplished, having graduate students "keeps us on our toes," one man said.)

Enthusiasm generated by the Journal Club has bred several offshoots, one at the National Institutes of Health, where several McCollum-Pratt alumni meet regularly in a journal club of their own, although each man is associated with a different institute, and others in Boston and Cambridge, England.

Another event closely identified with the institute is an annual McCollum-Pratt symposium. For seven years, the institute has organized and sponsored a meeting focused on a key topic in biochemistry—one where there is a need to bring together and digest the relevant information and ideas of experts in the field. Starting in 1950, the meetings have been devoted to copper metabolism, phosphorus metabolism, mechanism of enzyme action, amino acid metabolism, inorganic nitrogen metabolism, and the chemical basis of heredity.

The meetings, stemming from Mr. Pratt's wish that the institute serve as a center where world authorities on micro-nutrients and related topics might convene, have attracted wide recognition. "This was a shot in the arm for biochemical research," said an Israeli biochemist after the first symposium. During World War II there had been a breakdown in scientific communication, followed by a further lag in restoring the usual flow of scientific information.

Having one meeting which tied together all the advances and latest thinking in the field was invaluable, stimulating scientific thinking all over the world.

The current year is the first since 1950 in which no symposium was held. This year for the first time, in the opinion of the sponsors, there was no urgent necessity to meet—a fact which in itself may attest to the success of past years' conferences and of others throughout the world.

IN APRIL, the American Chemical Society, meeting in Miami, devoted two days to a symposium on trace elements. In a letter to Mr. Pratt, Dr. Firman E. Bear of Rutgers, organizer of the symposium, remarked that fifteen years ago such a program would have been impossible, unthinkable. Within recent years, however, biochemical research has raised knowledge in the field of micro-nutrients to the point where such a meeting was a scientific success.

Today the field is recognized as important not only because of the nutritive importance of trace elements in living organisms, but also because of the growing recognition that they are essentially linked with important biochemical systems.

A number of trace elements have already been established as integral components of particular enzyme systems. Zinc, for example, is now known to be a constituent of the enzyme involved in respiration. Cobalt, in the form of Vitamin B_{12}, and copper are intimately associated with the formation of hemoglobin in the blood and are often part of the therapy used in treating anemia. Molybdenum is involved in the enzyme system in plants which makes inorganic nitrogen available for the building of proteins in organic matter.

There is little question among scientists, nowadays, that our growing knowledge of the biochemical role of trace elements will be of great value in interpreting nutritional disorders. It has

also become obvious that there are no longer clear-cut fields for investigation in the biological sciences today. The plant biochemist works with rats, and the physicist finds himself enmeshed in biochemical problems. The important discoveries are coming from men who are taking bold and original approaches to the many unsolved biological mysteries.

The co-operative environment at McCollum-Pratt—and the manifest respect for the scientific integrity and talents of its members—is designed to provide solid support for such men.

T. S. N.

The Middle East in World Affairs

Continued from page 5

support a king against an elected parliament—but the outward forms of Middle Eastern political life should not mislead us into equating them with their Western originals. In the Middle Eastern poker game there is nothing inconsistent in a good republican playing a hand of three kings—and hoping that no one else will play the aces.

The only people who have ever succeeded in ruling the Middle East for any length of time, the Turks, had their own views on these matters. In a Turkish manual of statecraft, written in the middle of the seventeenth century, the author, Huseyn Hezarfenn, advises the sovereign to use fear as well as law to maintain his authority: "If the fear of punishment were to pass away from people's hearts, the evildoers would become more numerous and more arrogant. The right thing is that there should be fear among the bad and trust among the good people. Permanent fear and permanent trust are both harmful. While the people are between fear and hope, let the Sultanate be well-ordered and let the Sultan be generous." Between the Sixth Fleet and the Eisenhower doctrine, as it were, let the United States be both firm and munificent.

IN what has gone before I have tried to raise the conflicts of the Middle East from the level of a quarrel between states to that of a clash between civilizations.

But civilizations can have no foreign policies, and governments must. The question therefore remains, What action should the Western states take in the present Middle Eastern situation? My own answer would be, as little as possible.

The peoples of the Middle East are going through a crisis of transition, which we helped to precipitate, but which they alone can resolve. The United Nations has the limited but overtaxing duty of keeping the peace or at least of curbing the appetites of violence. We of the West can also do something to help, on non-political levels, but should beware of proposing solutions which, however good, are discredited by the very fact of our having suggested them. The West must of course safeguard its minimum interests, which I leave to others to define; it may also give some material help—though without hope of much political return. Apart from that let us watch and wait, do little and say less, and hope that in time the peoples of the Middle East may find their own way back to stability and health.

But of course the great dilemma of such a policy of "masterly inactivity" is how to leave the Middle East alone and at the same time insure that others also leave it alone. The point was well made by Walter Z. Laqueur in his book *Communism and Nationalism in the Middle East:* "It is quite true, as an Indonesian prime minister stated in Delhi recently to great applause, Asian affairs are no longer settled in London and Paris. What remains to be seen is whether the new rulers of the Middle East and Southeast Asia will be able in the future to prevent Asian affairs from being decided in Moscow and Peking."

Western rule in Asia has indeed gone, and a distinguished Indian scholar was right in speaking of the end of "the Vasco da Gama era" in Asian history. It would be both tragic and ironic if it were to be succeeded by a Nikita S. Krushchev era, which some future historian might also date from a voyage of exploration to the East.

Events at Johns Hopkins

Seven alumni meetings are scheduled (See Alumni Meetings)
Playshop schedules "House of Bernarda Alba" (See Drama)
"Johns Hopkins File 7" resumes telecasts (See Television)

HOLIDAYS

CLASS DAY—Courses in the Homewood Schools will be suspended at 1 p.m. on Friday, Nov. 22, in order to permit the class activities to be conducted without competition from the more serious things in life.

THANKSGIVING—The Homewood Schools, including McCoy College, will recess for the holiday from Thursday, Nov. 28 through Sunday, Dec. 1. The School of Advanced International Studies will suspend classes on Thursday, Nov. 28. The School of Medicine will suspend classes on Thursday, Nov. 28. The School of Hygiene and Public Health will suspend classes on Thursday, Nov. 28.

ALUMNI MEETINGS

NEW ENGLAND—President Milton S. Eisenhower will be the guest of honor at a reception and dinner of the New England-area alumni and alumnae on Wednesday, Oct. 30, at the Harvard Club in Boston.

UPPER NEW YORK STATE—Dr. Eisenhower will be the guest of honor at a reception and dinner of the Upper New York State alumni and alumnae on Thursday, Oct. 31, at the Mohawk Golf Club in Schenectady. (Details will be announced.)

PHILADELPHIA—Dr. Eisenhower will be the guest of honor at a reception and dinner of the Philadelphia-area alumni and alumnae on Friday, Nov. 1, in Philadelphia. (Details will be announced.)

DELAWARE—Dr. Eisenhower will be the guest of honor at a reception and dinner of the Delmarva-area alumni and alumnae on Saturday, Nov. 2, at the DuPont Hotel in Wilmington. (Details will be announced.)

SOUTHERN MEDICAL ASSOCIATION— A Hopkins hour will be held in conjunction with the annual meeting of the Southern Medical Association in Miami, Florida, on Wednesday, Nov. 13. (Details will be announced.)

JOHNS HOPKINS CLUB OF NEW YORK—A dinner meeting of the Club will be held on Wednesday, Nov. 20. (Details will be announced.)

ILLINOIS ALUMNI ASSOCIATION—Abel Wolman, professor of sanitary engineering, will be the guest of honor at a reception and dinner given by the Illinois Alumni Association in Chicago on Wednesday, Nov. 20. (Details will be announced.)

DRAMA

HOUSE OF BERNARDA ALBA—The Johns Hopkins Playshop will present the drama by Federigo Garcia Lorca about a Spanish mother and her six daughters who rebel against her attempts to isolate them from all contact with men. (Thursday through Sunday, Nov. 7 through 10, at 8:30 p.m. in the Playshop on the Homewood campus; admission, $1.50.)

TELEVISION

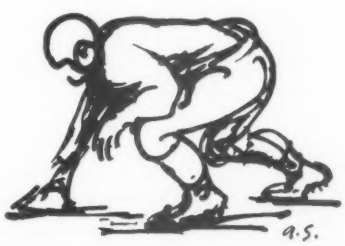
JOHNS HOPKINS FILE 7—The University's television program, dealing with all areas of the arts and sciences, has resumed its regular telecasting schedule and may be seen regularly in cities across the country. (In Baltimore on Sundays at 3 p.m., in New York City on Saturdays at 11:30 a.m.; from WJZ-TV in Baltimore over the American Broadcasting Company network. Consult local listings for time and channel.)

EXHIBITION

RARE COINS—The first public showing of the extensive Greek holdings of the Johns Hopkins numismatic collection, open to the public without charge. (Monday, Nov. 11 through the middle of January, from 2 to 5 p.m. at Evergreen House, 4545 N. Charles Street; closed Saturdays and Sundays.)

CONFERENCE

FOREIGN AFFAIRS CONFERENCE FOR CORPORATION EXECUTIVES—The Johns Hopkins School of Advanced International Studies and its affiliated Foreign Service Educational Foundation will devote their first two-day conference of the year to "Recent Developments in Western Europe," an analysis of recent developments in Europe and their effect on U.S. business. The conferences are off-the-record sessions for business executives, labor leaders, and government officials on matters concerning American business operations abroad. (Thursday and Friday, Oct. 17 and 18, at the Hotel Statler in Washington, D.C.; information and reservations from the School of Advanced International Studies, 1906 Florida Avenue, N.W., Washington 9, D.C.; telephone, ADams 4-2940.)



VARSITY SPORTS

NOTE—No admission fee is charged for Johns Hopkins home athletic events, but an admission card is required. Persons who wish to attend games during the current university year may obtain a card without charge by sending a stamped, self-addressed envelope to the Department of Physical Education, the Johns Hopkins University, Baltimore 18, Md. Alumni of the University should address their requests for admission cards to the Alumni Relations Office, the Johns Hopkins University, Baltimore 18, Md.

FOOTBALL—Johns Hopkins vs. HAMPDEN-SYDNEY on Saturday, Oct. 26 (away); RANDOLPH-MACON on Saturday, Nov. 2 (Homewood Field at 2 p.m.); SWARTHMORE on Saturday, Nov. 9 (Homewood Field at 2 p.m.); DICKINSON on Saturday, Nov. 16 (away); WESTERN MARYLAND on Saturday, Nov. 23 (Homewood Field at 2 p.m.).

SOCCER—Johns Hopkins vs. DREXEL on Saturday, Oct. 26 (away); LOYOLA on Wednesday, Oct. 30 (Homewood at 3 p.m.); TOWSON TEACHERS on Saturday, Nov. 2 (away); FRANKLIN AND MARSHALL on Wednesday, Nov. 6 (Homewood at 3 p.m.); WASHINGTON on Saturday, Nov. 9 (away); MARYLAND on Wednesday, Nov. 13 (away); DELAWARE on Saturday, Nov. 16 (Homewood at 2 p.m.); WESTERN MARYLAND on Saturday, Nov. 23 (Homewood at 11 a.m.).

CROSS COUNTRY—Johns Hopkins vs. DELAWARE on Friday, Oct. 25 (away); TOWSON TEACHERS on Tuesday, Oct. 29 (Homewood at 4 p.m.); WASHINGTON on Saturday, Nov. 2 (Homewood at 2:30 p.m.); SWARTHMORE on Saturday, Nov. 9 (Homewood at 2:30 p.m.); PENNSYLVANIA MILITARY on Saturday, Nov. 16 (away).

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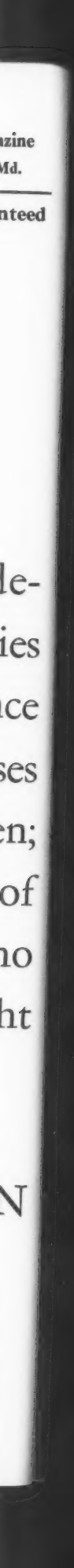
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